REMARKS

Applicants have amended claim 18 to further define the "PAP II protein" as a "mutant PAP II protein." Support for the amendment is contained in the specification and other original claims, *e.g.*, page 2, lines 21-24, and claim 25. Claim 32 has been amended by changing its dependency to claim 18. Thus, no new matter has been added. Entry of the amendment is respectfully requested.

Claims 1, 2, 4, 5, 12 and 18 have been rejected under 35 U.S.C. §112, second paragraph, as vague and indefinite in various recitations. Each ground of rejection will be addressed in turn.

Claim 1 has been rejected as indefinite in the recitation, "PAP II protein" in that it can mean many things and is unclear because the metes and bounds of such a claim cannot be defined. Applicants respectfully disagree. The definition of this recitation is not confined to page 7 (as indicated by the Examiner); rather, it is set forth in the disclosure beginning on page 5, line 28 through page 9, line 15, in terms of its structure *and* function. The fact that the claim recitation at issue embraces "mutants or analogs," thus making the claim broader rather than narrower, does not make the claim indefinite. Persons skilled in the art would readily understand the meaning of the term in the present context in which it is used. Not only do Applicants provide sequences of immature wild-type PAP II and mature PAP II, they describe at least twenty-six different mutants and analogs of PAP II. Thus, reconsideration and withdrawal of this ground of rejection are respectfully requested.

The Examiner has also objected to claim 1 on the ground that it lacks a recitation of a "transformation with a heterologous sequence," thus making it unclear as to what the plant cell is. Applicants respectfully submit that claim 1 is clear and definite without any such recitation. Persons skilled in the art would readily understand the kinds of plant cells that would be embraced by claim 1, particularly in light of the disclosure in the specification, *e.g.*, pages 14-15. Simply put, the claim is directed to a composition of matter, and does not have to be limited to any particular process by which it was made (*i.e.*, as by way of a product-by-process format).

Besides, the recitation "recombinant" clearly implies a manipulation of a cell at the genetic level. Reconsideration and withdrawal of this ground of rejection are respectfully requested.

The Examiner has requested an amendment to claim 4 to recite a sequence identification number to further define the recitation "PAP II (1-285)." Applicants respectfully submit that no such sequence identifier is needed in this case. The claim recitation is clearly defined on page 5, lines 30-31 of the specification (*i.e.*, as the 285-amino acid polypeptide containing amino acid residues 26-310 of the immature PAP II protein shown in Table 2). Aside from that, no separate sequence identifier has been matched with this sequence. Thus, reconsideration and withdrawal of this ground of rejection are respectfully requested.

Claim 5 has been rejected as indefinite in the recitation "mutant," because the metes and bounds of the claim cannot be defined. Applicants respectfully traverse this ground of objection as well. Persons skilled in the art appreciate that the term, "mutant" when applied to a protein or polypeptide, refers to rearrangements such as deletions, substitutions, and additions, etc. Thus, given the present context in which it is used, and the disclosure in the specification illustrating such mutants, Applicants submit that there is no unclarity or indefiniteness.

Claims 5 and 18 have been rejected in the recitation of "intact catalytic active site amino acid residue (E172)." Applicants respectfully traverse this ground of objection. Applicants respectfully submit that this claim recitation would be clear and definite to persons skilled in the art. First, the recitation "E172" is clear in terms of the nature of the amino acid residue and its relative position in the overall polypeptide sequence. Second, the recitation "intact" is clear in that whatever deletion, substitution, etc., that may be present in an embodiment of the present invention directed to a mutant PAP II, the mutation does not involve the E172 residue. Third, the recitation, "active site" simply refers to the belief that the recited amino acid residuecontributes to the formation of an active site that participates in the cleavage of an N-glycosidic bond of adenine in a specific ribosomal RNA sequence. See, *e.g.*, Stirpe, *et al.*, Bio/Technology *10*:405-410 (1992) (copy enclosed). In view of the foregoing, reconsideration and withdrawal of the rejection are respectfully requested.

The Examiner has objected to claims 4, 5 and 18 as unclear in the recitations of the numbers in parentheses. The specification clearly indicates that the parenthetical recitations

are a shorthand notation for specific amino acid residues for amino acid sequences contained within SEQ ID NO:4 set forth in Table 2 of the specification. Thus, Applicants submit that these recitations are clear and definite and would be understood by persons skilled in the art. Reconsideration and withdrawal of this ground of objection are respectfully requested.

Claims 1-5, 12, 18 and 32 have been rejected under §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that at the time the application was filed, the inventors had possession of the claimed invention. The Examiner has alleged that there is no structural description of what comprises the PAP II protein, or any functional requirement or description of the PAP II protein, and that other than the intact E172, there is no structural description of what describes a mutant PAP II protein. Applicants respectfully disagree.

As explained above, the disclosure on pages 5-9 of the specification explains what a "PAP II protein" is from both structural and functional standpoints. The Examiner has offered absolutely no evidence or reasoning whatsoever as to why these teachings fail to provide written description support for the claims. Ironically, and despite the present allegations, the Examiner obviously felt that there were too many embodiments of "PAP II proteins" disclosed in the specification and embraced by and/or recited in the claims to be examined in a single patent application, and thus required a restriction and election of species. (See, Paper No. 10.) Plainly, in view of the teachings in the specification regarding PAP II proteins (*i.e.*, both wild-type and many examples of PAP II mutant proteins), persons skilled in the art would have appreciated that at the time the invention was made, Applicants did have possession of the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

Claims 18 and 32 have been rejected under §102 (b) as anticipated by Poyet, *et al.* The Examiner has alleged that *Poyet* teaches a DNA molecule comprising a sequence encoding a PAP II protein that has intact catalytic active site amino acid residue (E172) and exhibits anti-viral and/or anti-fungal activity, and further, a vector containing this DNA molecule.

Applicants respectfully submit that claims 18 and 32, as amended, are not anticipated by the teachings of *Poyet*. This publication teaches wild-type PAP II. It does not

teach any mutant PAP II proteins. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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